

FIG. 1

cvHAS	MG--KNIIIM	VSUWYIITS-	-----NL	IAVGGASLI	APAITGVLH	39
seHAS	MRTLKNLIT-	-----	-----V	VAFSIFWVL	I-----VNV	25
spHAS	VPIFKKTLI-	-----	-----V	LSFIFLISI	I-----LNM	25
huHAS	MHCERFLCIL	RI---IGTTL	-----	----FGVSL	LGITAAIVG	33
xlHAS	MK-EKAAETM	EIPEGIPKDL	EPKHPTLWRI	IYYSFGVVL	ATITAAVAE	49
cvHAS	WNIALST--I	WGVSAIGIFV	FGFFLAQVLF	SELNRKRLRK	WISLRPKGWN	87
seHAS	YLFGAKG---	-SLSINGFLL	IAYLLVKMSL	SFF-YKPFKG	R---AGQ--Y	65
spHAS	YLFGT-S---	-TVGIGVIL	ITYLVIKLGL	SFL-YEPFKG	N---PHD--Y	64
huHAS	YQFIQTDNYY	FSFGLYGAFL	ASHLIIQSLF	AFLEHRKMKK	SLETPIK--L	81
xlHAS	FQVLKHEAIL	FSLGLYGLAM	LLHLMQSLF	AFLEIRRVNK	S-ELPCS--F	96
cvHAS	DVRLAVITAG	YREDPYMFQK	CHESVRDSD	GNVA-RLIC	IDGDEDDDMR	136
seHAS	K--VVAITPS	YNEDAESLLE	TIKSVQQQT	PLAE--IYV	DDGSADETGI	111
spHAS	K--VVAITPS	YNEDAESLLE	TIKSVLAQT	PLSE--IYI	DDGSSNTDAI	110
huHAS	NKTVLCTHAA	YQBDPDYLRL	CHOSVKRLTY	PG--IKVVM	IDGNSEDDLY	129
xlHAS	KKTVLCTHAG	YQENPEYLIK	CHESCKYVK	PKDKLKIIL	IDGNTEDDAY	146
cvHAS	MAAVYKAIYN	DN-----	-----IKKPE	-----FV	LCESDDKEGE	165
seHAS	KR-----	---IEDYVRD	-----	TGDLSSNVIV	HRSEKNQGKR	140
spHAS	QL-----	---IEEYVNR	-----	EVDICRNIV	HRSLVNKGKR	139
huHAS	MMDIFSEVMG	RDKSATYIWK	NNFHE-KGPG	ETDES-----	-----HKESS	168
xlHAS	MMEMFKDVFH	GEDVGTYVWK	GNYHTVKKPE	ETNKGSCPEV	SKPLNEDEGI	196
cvHAS	RIDSDF---S	RDICVLQPHR	GKRECLYTG	QLAKMDPSVN	AVVLIDSDTV	212
seHAS	HA-----	-----QAW-	-----A	E--RSDADV-	FLTV-DSDTY	163
spHAS	HA-----	-----QAW-	-----A	E--RSDADV-	FLTV-DSDTY	162
huHAS	QHVTQLVLSN	KSICIMQKWG	GKREVMYTA	R--ALGRSVD	YVQVCDSDTM	216
xlHAS	NMVEELVRNK	RCVCIMQQWG	GKREVMYTA	Q--AIGTSVD	YVQVCDSDTK	244
cvHAS	LEKDAILEVV	YPLACDPEIQ	AVAGECKIWN	T-DTLLSLLV	AWRYSAECV	261
seHAS	IYPDALELL	KTFNDPTVFA	ATG-HLNVRN	RQTNLLTRLT	DIRYDNAEGV	212
spHAS	IYPNALELL	KSFNDETVYA	ATG-HLNARN	RQTNLLTRLT	DIRYDNAEGV	211
huHAS	LDPASSVEMV	KVLEEDPMVG	GVGGDVQILN	KYDSWISFLS	SVRYWMAFNI	266
xlHAS	LDELATVEMV	KVLESNDMYG	AVGGDVRILN	PYDSFISFMS	SLRYWMAFNV	294
cvHAS	ERSAOSFFRT	VQCVGGPLGA	YKIDIKEIK	DPWISORELG	QKCTYGDDR	311
seHAS	ERAAOSVTGN	ILVCSGPLSV	YRREVVPNI	DRYINOTELG	IPVSIIGDDRC	262
spHAS	ERAAOSLTGN	ILVCSGPLSI	YRREVIIPNL	ERYKNOTELG	LPVSIIGDDRC	261
huHAS	ERACOSYFGC	VQCISGPLGM	YRNSLLHEFV	EDWYNQEEFG	NQCSFGDDRH	316
xlHAS	ERACOSYFDC	VSCISGPLGM	YRNNILQVFL	EAWYROKELG	TYCTLGDDRH	344
cvHAS	LTNEILMRK	KVVFPTFAVG	WSDSETNVFR	YIVOOTRWS	SWCREIWTYL	361
seHAS	LTNYATDLG-	KTVYQSTAKC	ITDVEQKMT	YLKQONRWN	SEFFRESIISV	311
spHAS	LTNYAIDLG-	RTVYQSTARC	DTDVEFOLKS	YLKQONRWN	SEFFRESIISV	310
huHAS	LTNRVLSLGY	ATKYTARSKC	LTETPIEYLR	WLNOOTRWS	SYFREWLYNA	366
xlHAS	LTNRVLSMGY	RTKYTHKSRA	FSETESLYLR	WLNOOTRWS	SYFREWLYNA	394
cvHAS	FAAWKHGLSG	ILWAFECLYQ	ITYFFLVIYL	FSRLAVEADP	RAQTATVIVS	411
seHAS	KKIMNPFVA	LNTILEVSMF	MMLVYSVDF	FVGNVREFDW	LRLAFLVII	361
spHAS	KKILSNPIVA	LNTIFEVVMF	MMLIVAIGNL	LFNQAIQLDL	IKLFAFLSII	360
huHAS	MWFHKHH---	LWMTYIAIIT	GFFPFFLIAT	VIQLFYRGKI	WNILLFLLTV	413
xlHAS	QWWHKHH---	LWMTYESVVS	FIFPFFITAT	VIRLIYAGTI	WNVVWLLLCI	441
cvHAS	TTVALIKCGY	FSFRAKDIRA	FYFV-LYTFV	YFFCMIFARI	TAMMFLWDIG	460
seHAS	FIVALCRNIH	YM--LKHPLS	FLLSPFYGVL	HLFVLOELKL	YSLFIRNAD	409
spHAS	FIVALCRNVH	YM--VKHPAS	FLLSPLGIL	HLFVLOELKL	YSLCIRKNT	408
huHAS	QLVGLIKSS-	FASCLRGNIV	MVFMSLASVL	YMSLLFAKM	FAIATINKAG	462
xlHAS	QIMSIFKSI-	YACWLRGNFI	MLLMSLASML	YMTGLLESKY	FALLTLNKTG	490
cvHAS	NDIRGGNEKP	SVGTRVALWA	KQYLIAYMWW	AAVVGAGVYS	IVHNWMFDWN	510
seHAS	NGT-----RKK	L-----	-----	-----	-L*	417
spHAS	NGT-----RKK	V-----	-----	-----T	IFK*	419
huHAS	NGTSG--RKT	IVVNFIGL--	---IPVSVWF	TILLGGVIFT	IYKESKRPF	505
xlHAS	NGTSG--RKK	IVGNYPPI--	---LPLSIWA	AVLCGGVGYS	IYMDCCNDWS	533
cvHAS	S-----LSYR	FALVGIC-SY	IVFIVIVLVV	YFTGKITTWN	FTKLQKELIE	554
huHAS	ES-KQTVLIV	GTLTYAC---	--YVWMLLTL	YV---VLINK	CGRKKGGQY	546
xlHAS	TPEKQKEMY-	-HLLYGCVGY	VMYWVIMAVM	YW---VWVKR	CCR-KRSQTV	577
cvHAS						

FIG. 2

0987999-051304

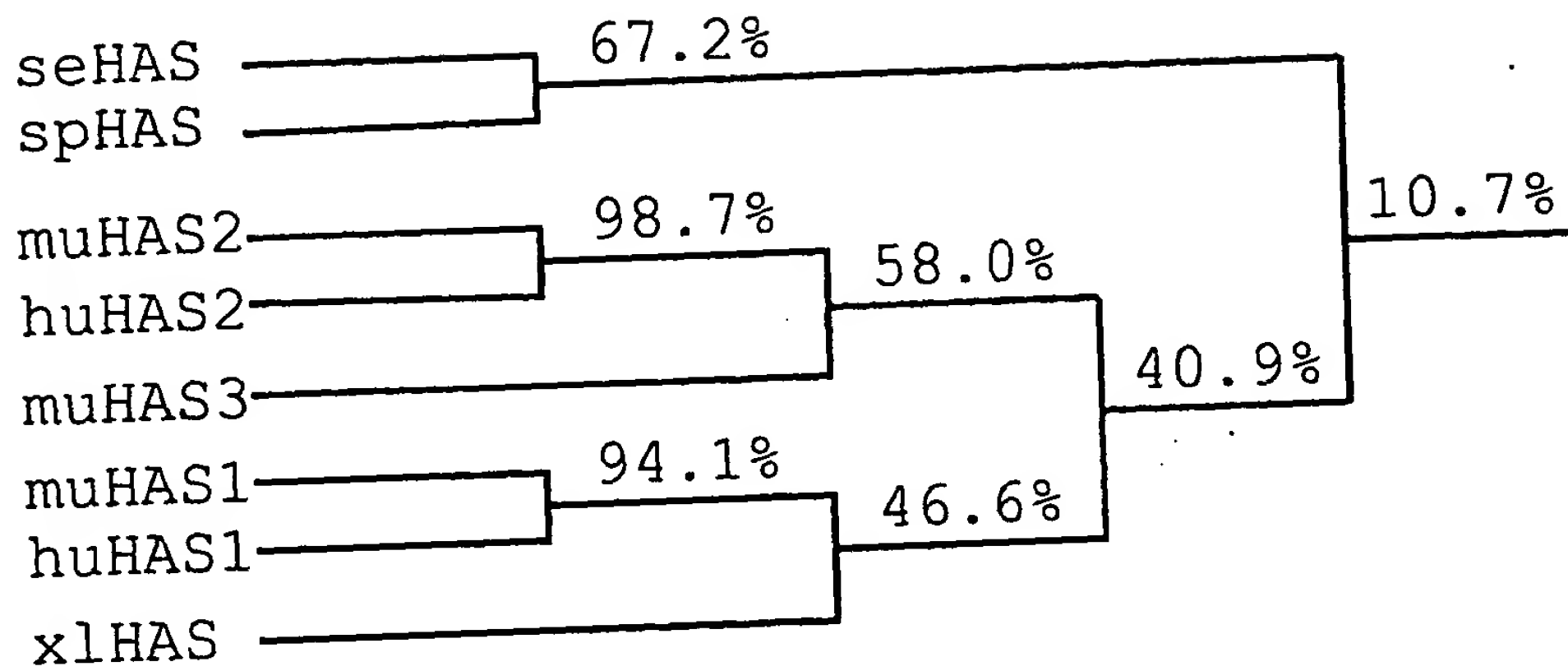


FIG. 3

SIZE DISTRIBUTION OF HYALURONAN PRODUCED BY DIFFERENT ENGINEERED STREPTOCOCCAL HAS ENZYMES

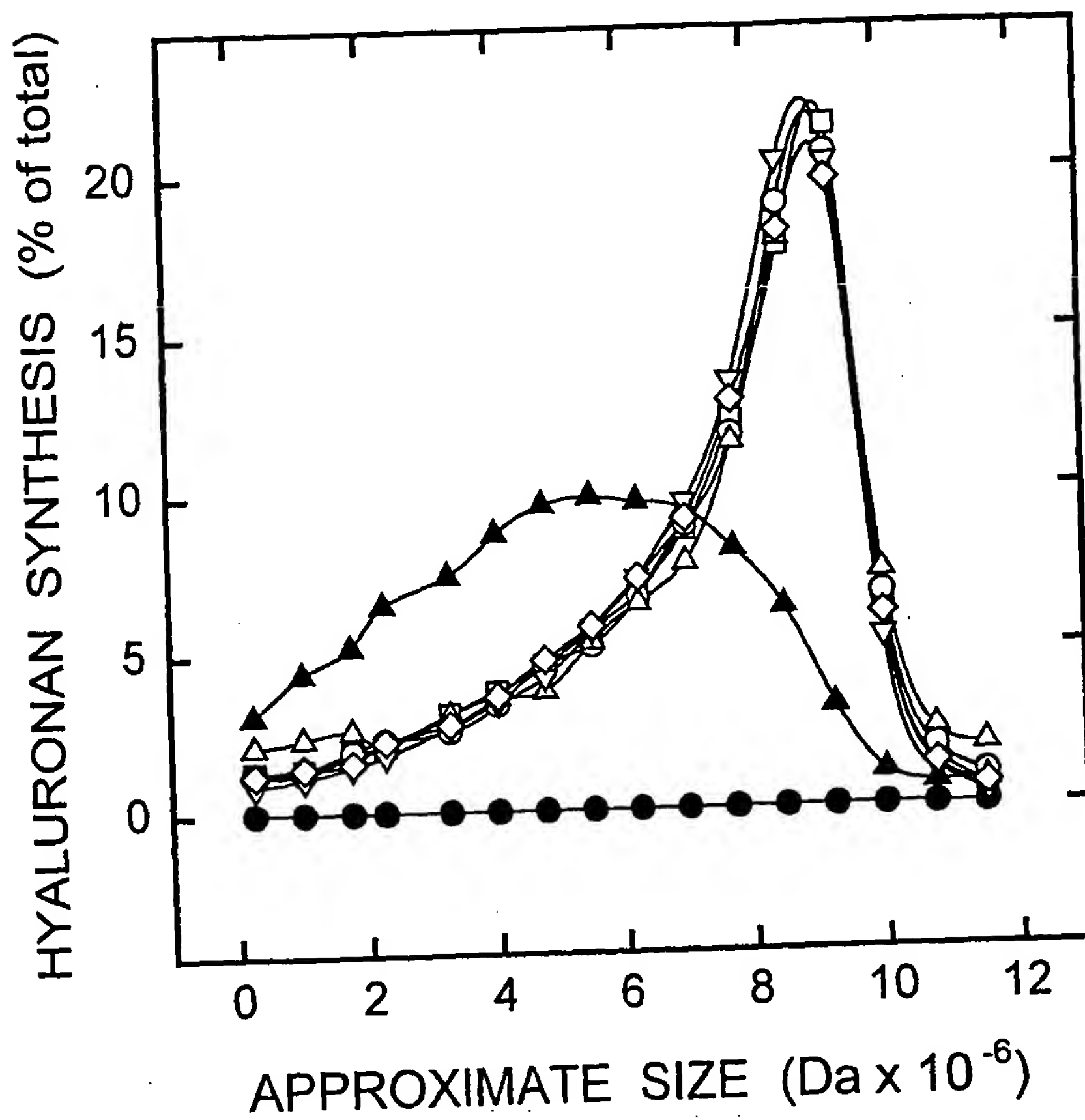


FIG. 4

0987959-061304

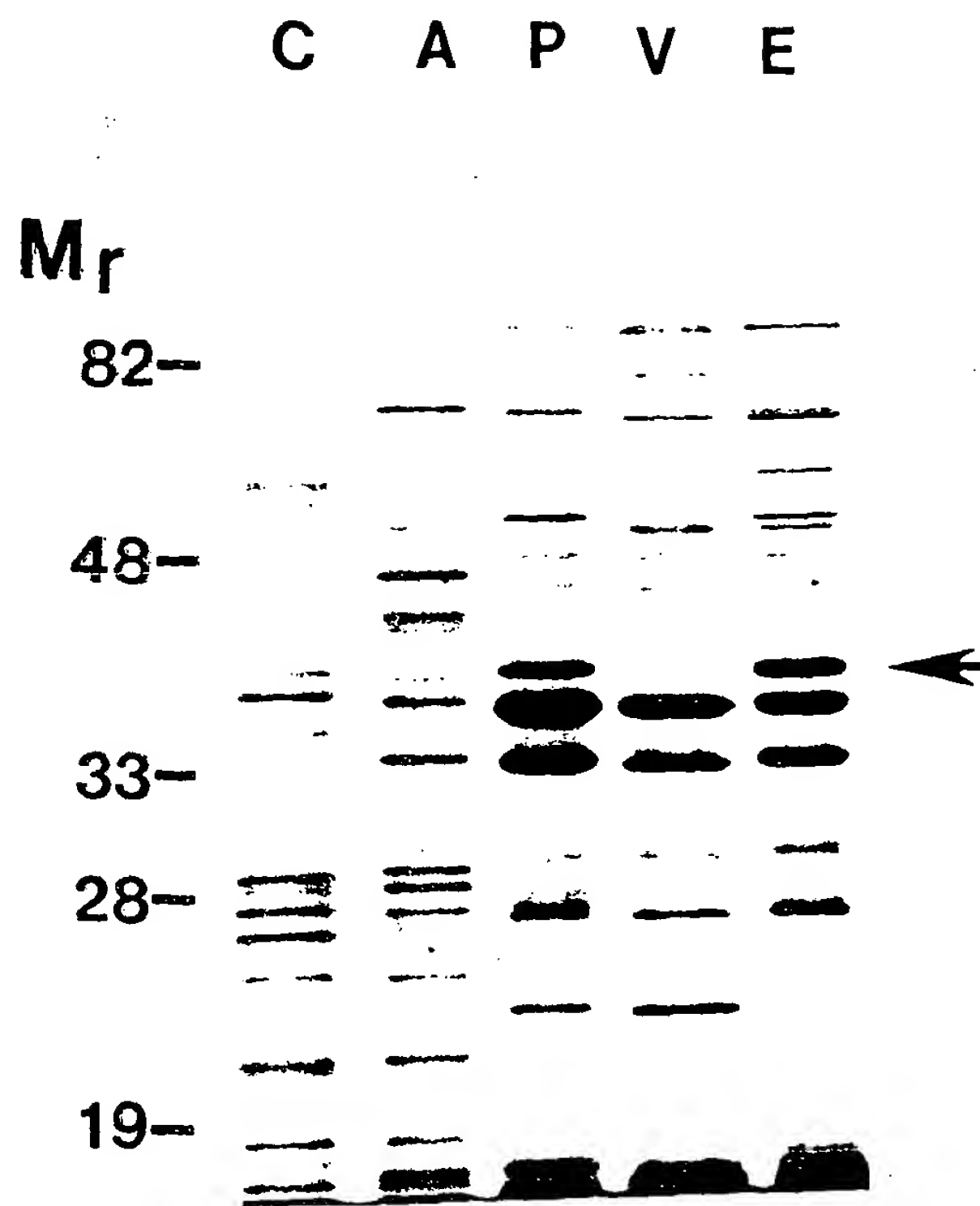


FIG. 5

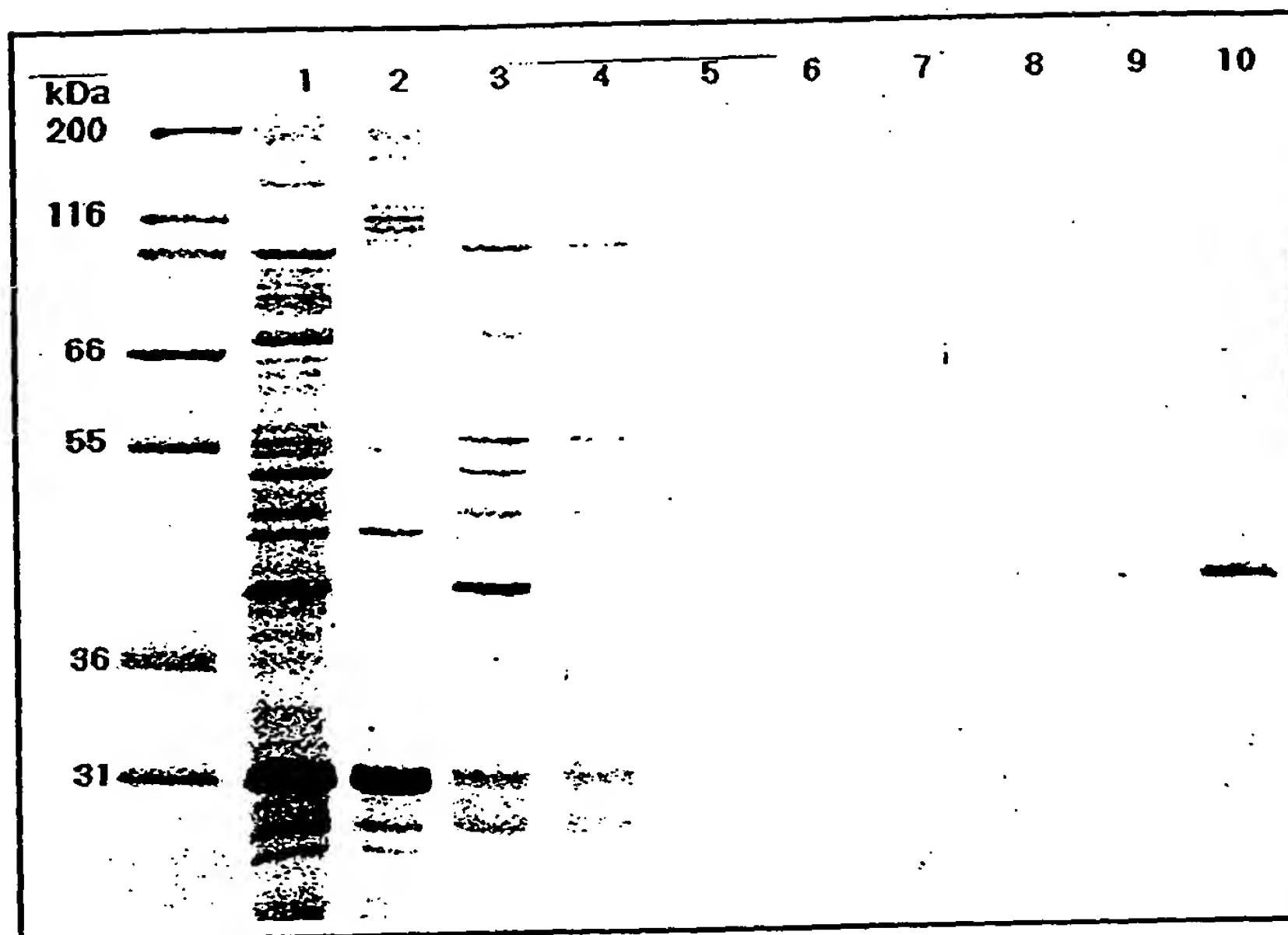


FIG. 6

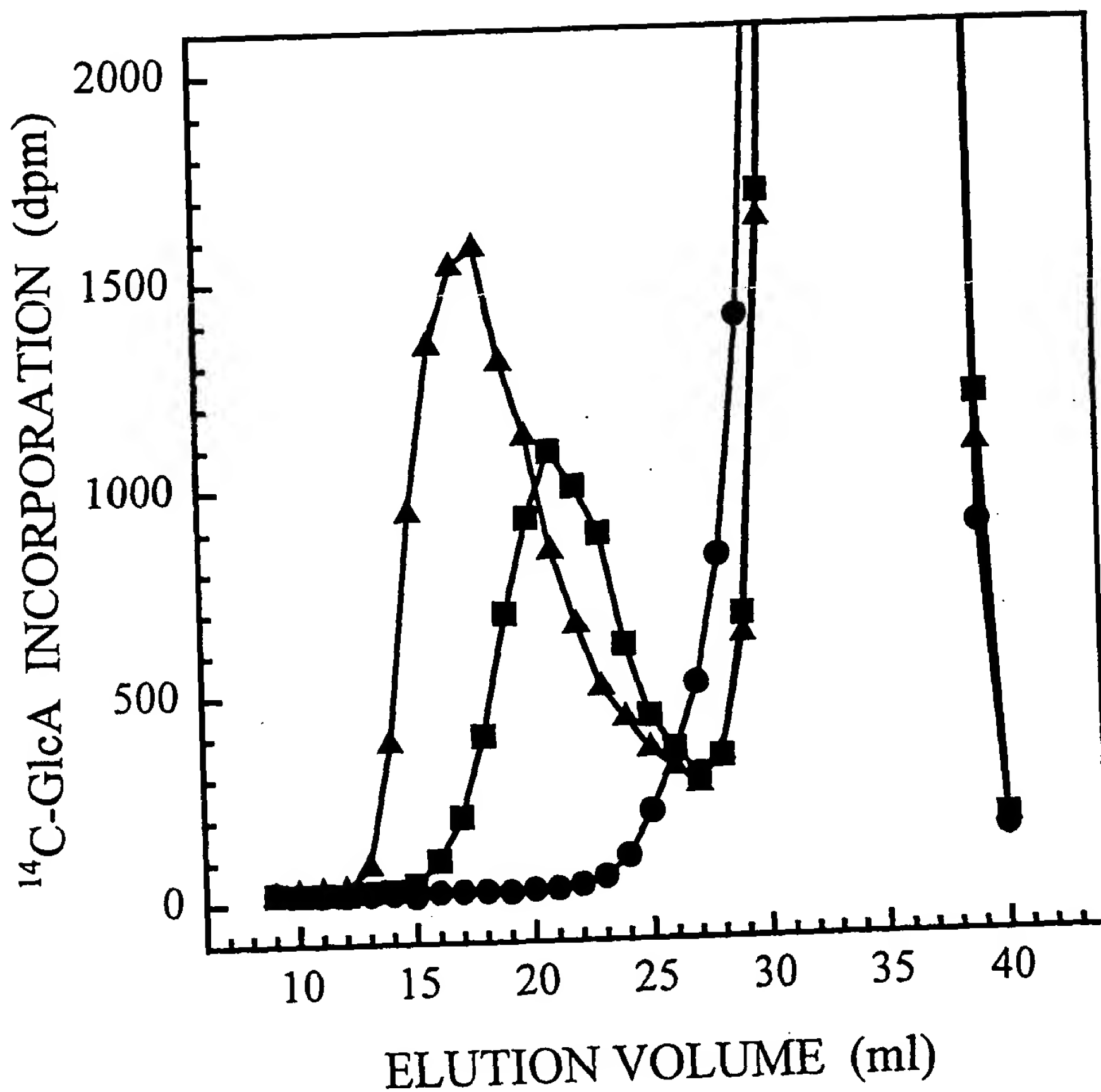


FIG. 7

09879559-061301
TDE T30-6567860

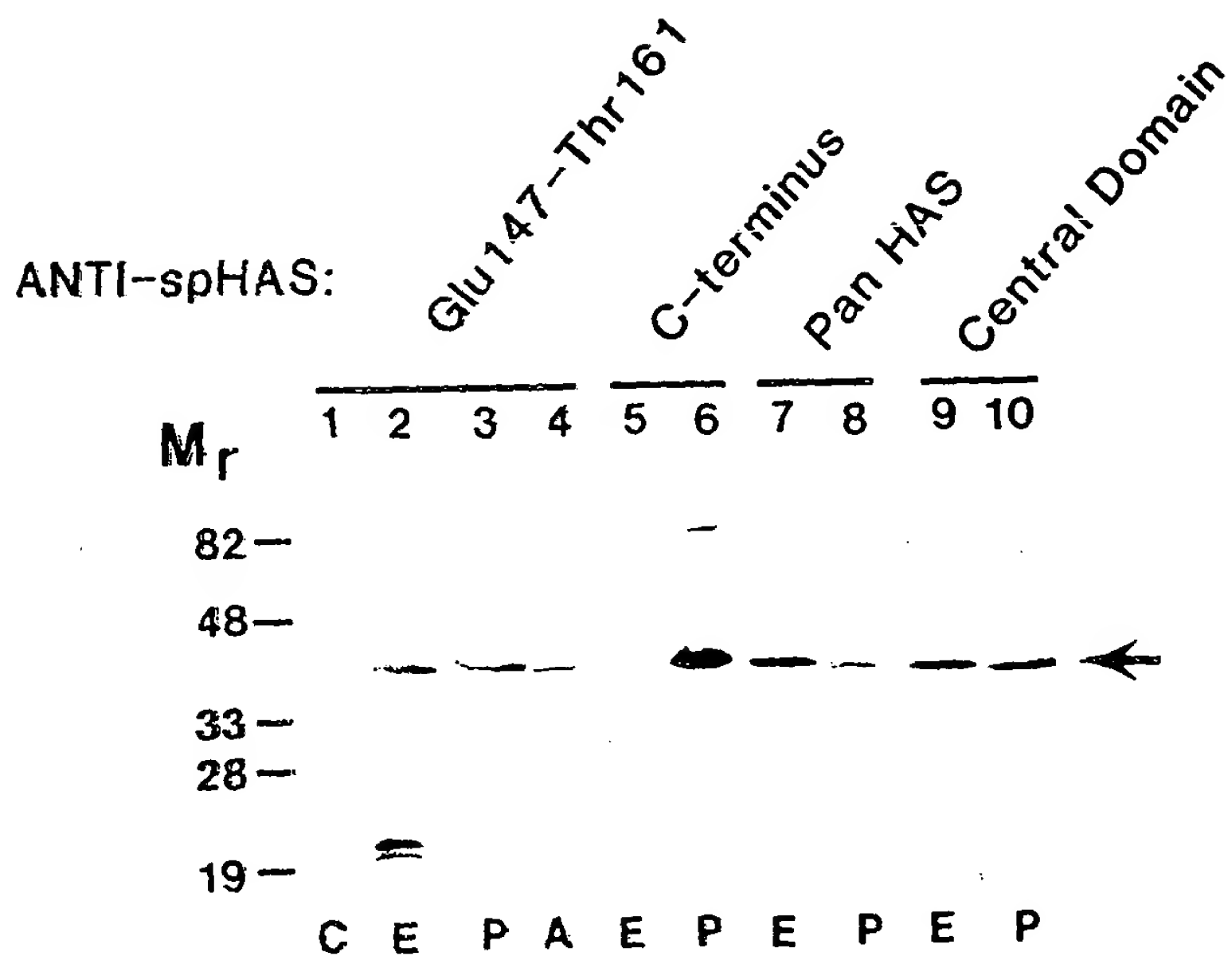


FIG. 8

HYALURONAN SYNTHESIS (% of total ^{14}C -incorporation into HA)

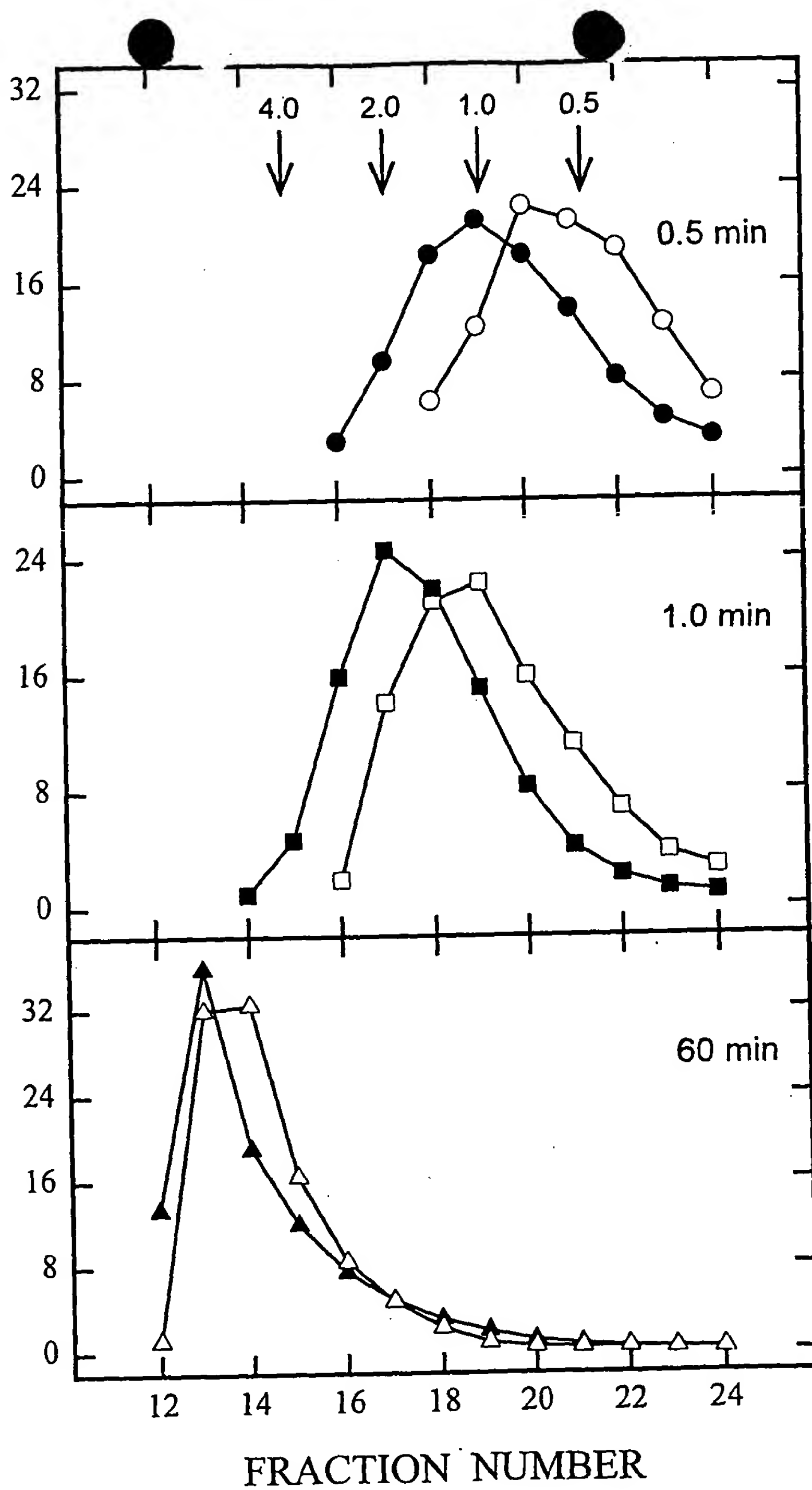


FIG. 9

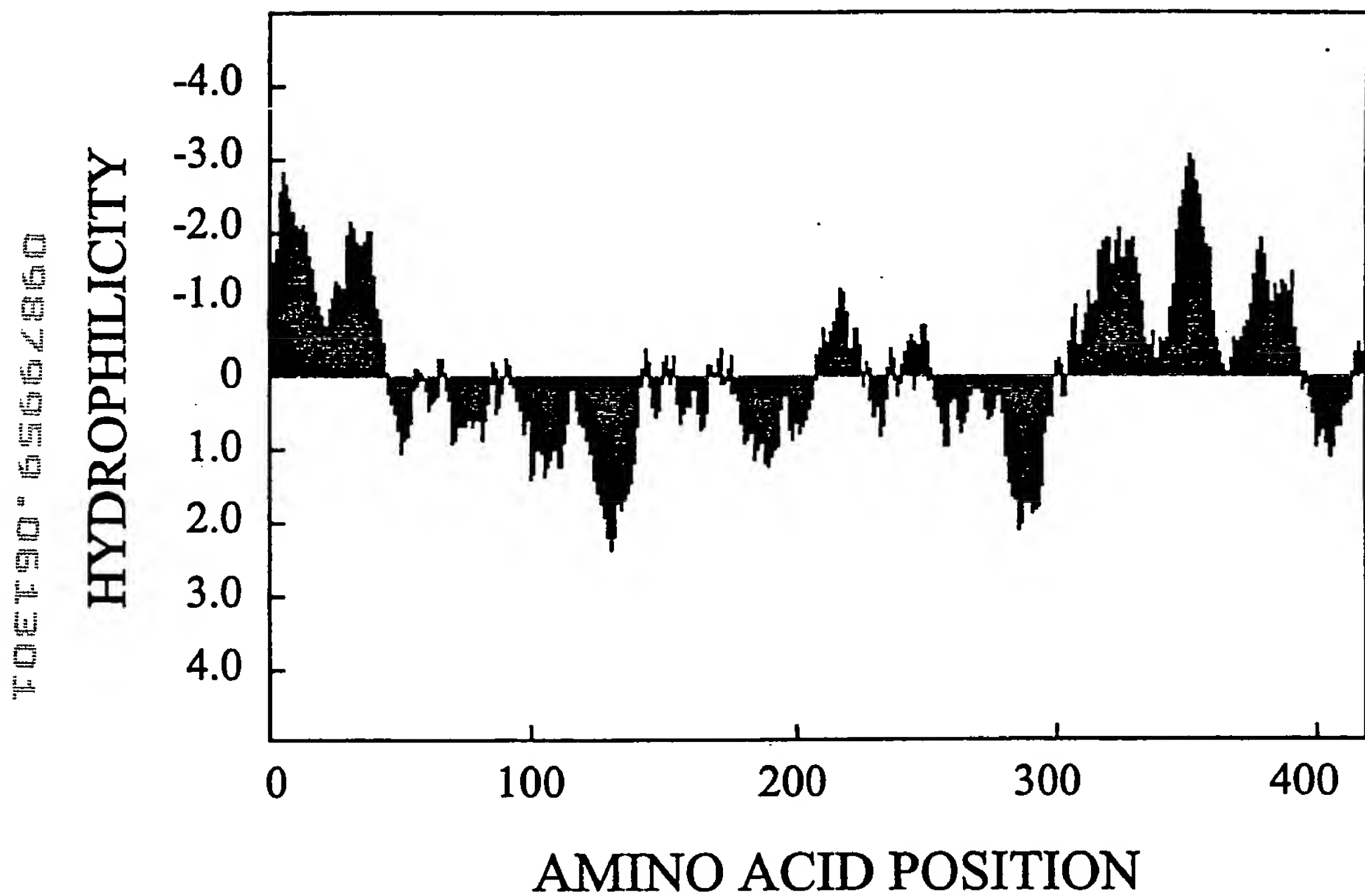


FIG. 10

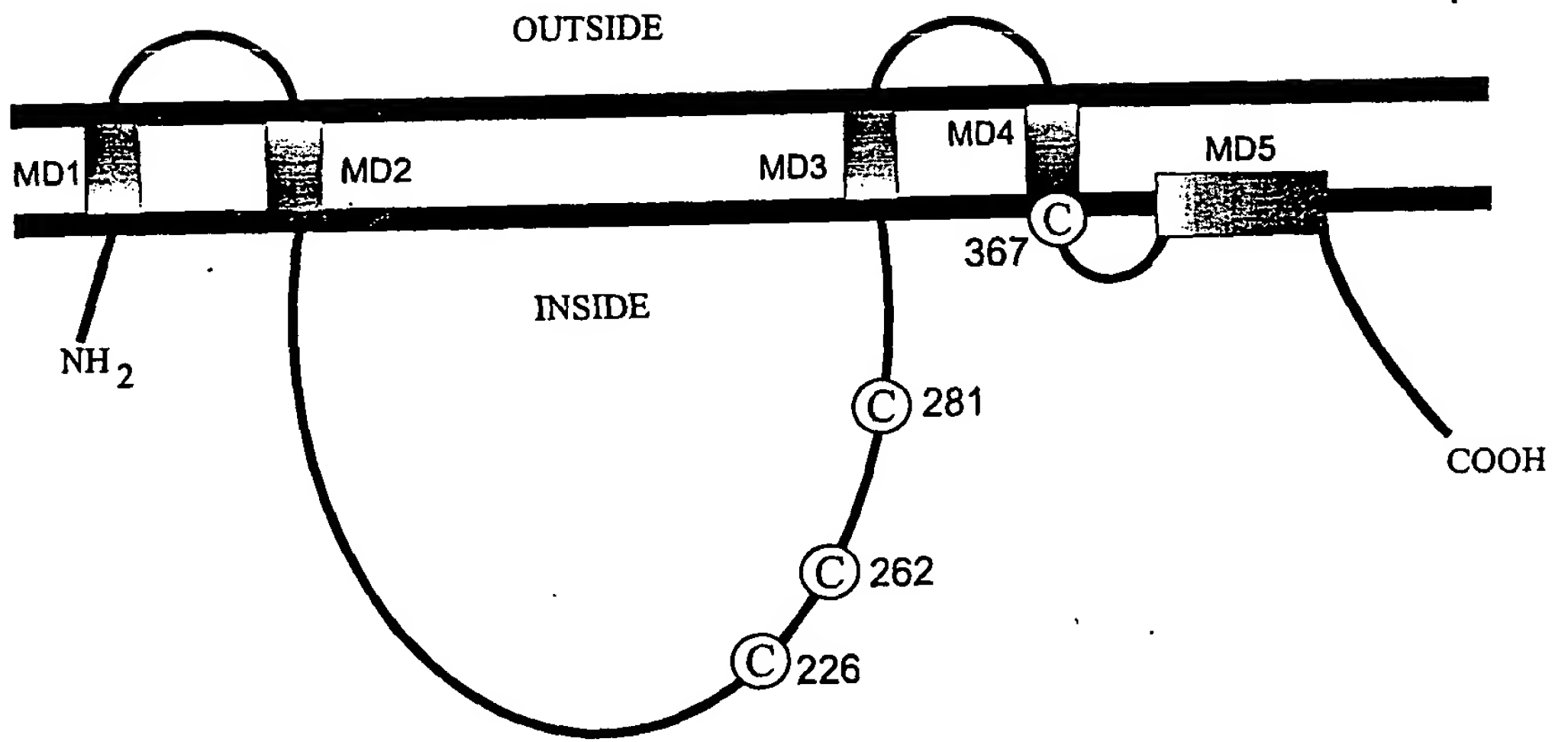


FIG. 11

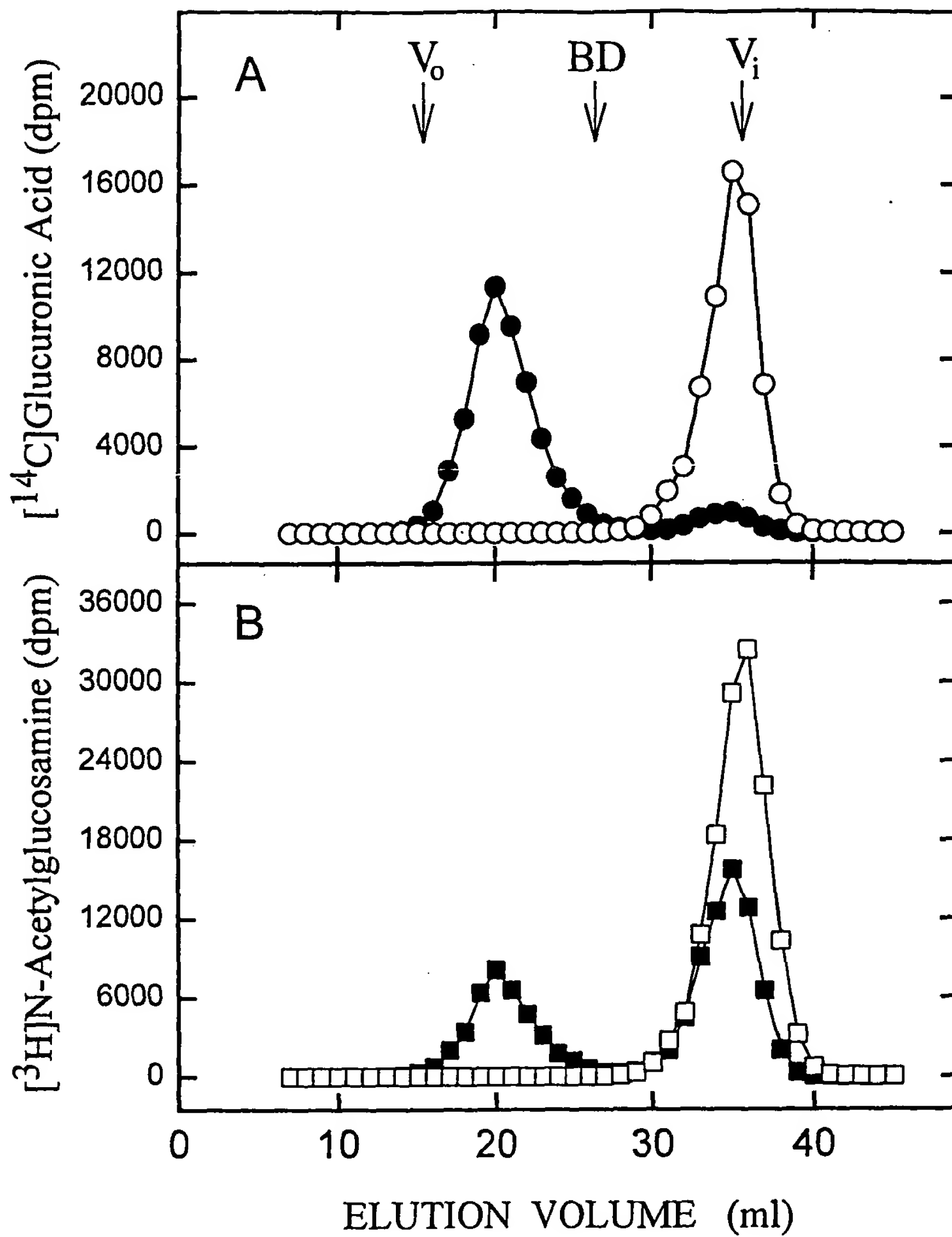


FIG. 12

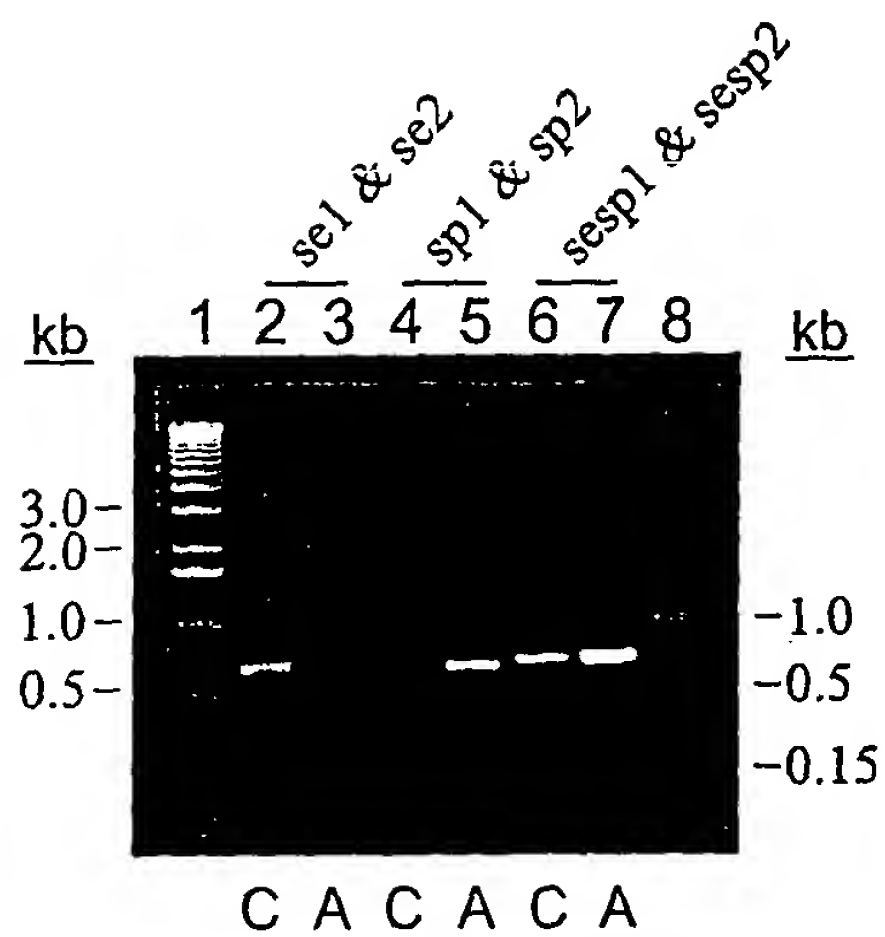


FIG. 13